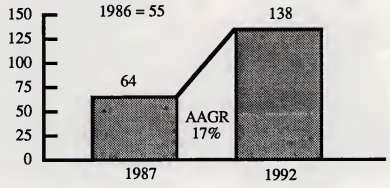
INFORMATION
SERVICES
INDUSTRY
1987-1992

INPUT

NOTES:

MPRE-37

INFORMATION SERVICES MARKET
($ Billions)



INPUT

NOTES:

MPRE-40

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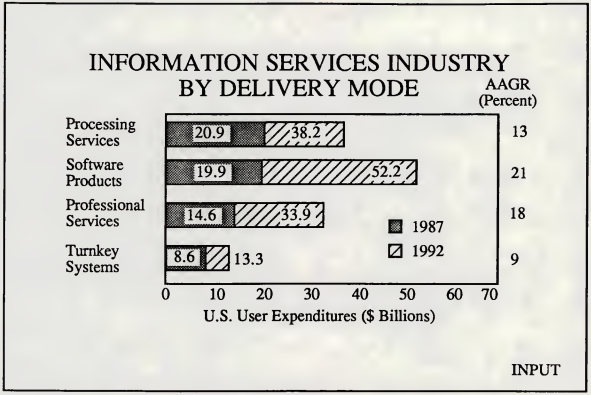

NOTES:

MPRE-41

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MACRO ISSUES

INFORMATION SERVICES

- Focusing on End User Needs (Vertical)
- Complexity Begets Customization
- Implementation Skill Mix Shortfall Begets Professional Services Boom
- Competitive Advantage Fuels Systems Integration
- Alliance Selection and Formation

INPUT

NOTES:

MPRE-6

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IMPACT OF
STOCK MARKET
VOLATILITY

INPUT

NOTES:

MPRE-9B

EFFECTS OF LOWER STOCK PRICES

- Capital Formation
- Initial Public Offerings (IPOs) Postponed
- Secondary Placements-Lower Valuations
- Mergers and Acquisitions Delayed

AND

- Possible Regulatory Changes

INPUT

NOTES:

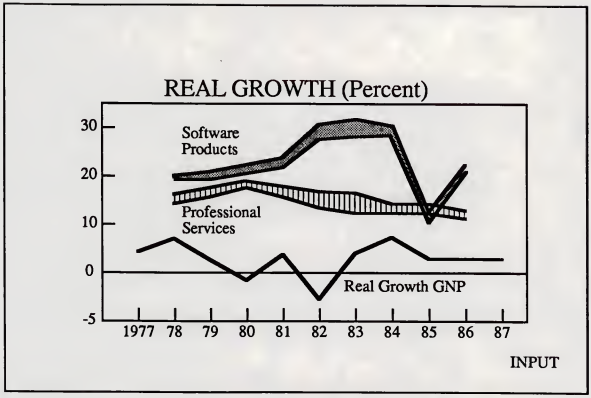
MAJOR INDICATORS REPORTED SINCE BLACK MONDAY - U.S. ECONOMY

- ☐ Manufacturing Capacity Utilization at 81.4%
- ☐ Unemployment at Lowest Level in 10 Years
- ☐ Company Profits at Near All-Time Rate
- ☐ Personal Income Surge Highest Since WWII

INPUT

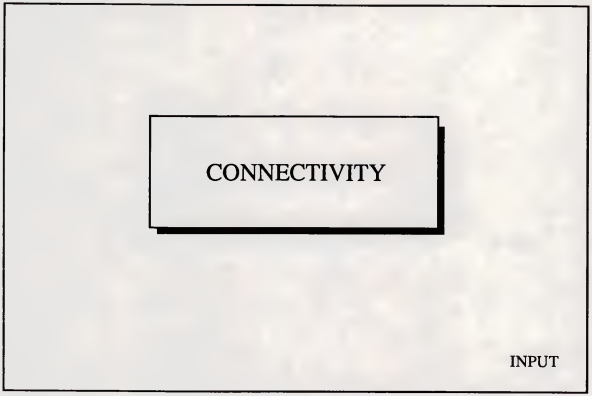
NOTES:

MPRE-11A



NOTES:

MPRE-16B



NOTES:

MPRE-21

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VENDOR CHARACTERISTICS

Vendor Group	Thrust	Process Under-standing	Flexibility
Applications Software	Standard Package	LTD	Low
System Manufacturers	Box	Variable	Medium
Professional Services	People	Variable	High
Systems Integrators	Solution	Medium	Very High

INPUT

NOTES:

MPRE-116

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PROFESSIONAL SERVICES

INPUT

NOTES:

MPRE-124

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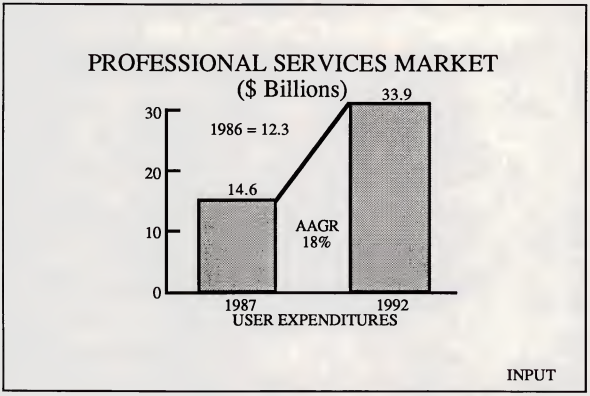

INPUT

NOTES:

MPRE-126

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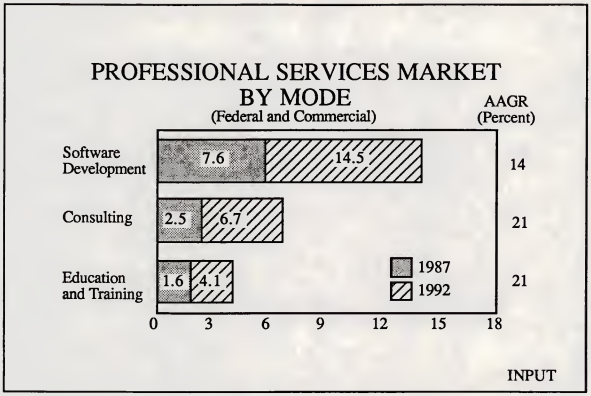

NOTES:

MPRE-130

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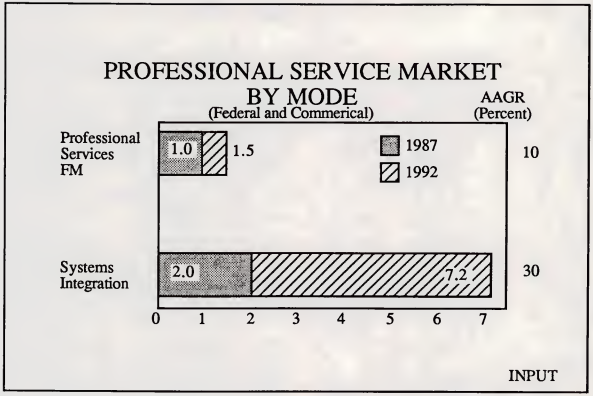

NOTES:

MPRE-131

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SYSTEMS INTEGRATION

"The Provision of a Total Solution to a
Multidisciplinary Information Systems Requirement"

INPUT

NOTES:

MPRE-132

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1987-1997
MACRO ISSUES

- End User Environment
  - Emphasis on Integration of Systems Already in Place
  - Performance, Productivity and Cost Reduction are Key Sales Points
  - Networking, Connectivity and Upstream/ Downstream Linkage are the Growth Markets

INPUT

NOTES:

SMKT-9

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1987-1997 MACRO ISSUES
(Cont.)

- Social Environment-Degradation in Quality and Dependability of Work Force
  - Lack of Adequate Education and Training
  - Systems Needed to Support Stressed Upper Tier
  - Demand for Real-Time Information Support Systems

INPUT

NOTES:

SMKT-10

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1987-1997 MACRO ISSUES
(Cont.)

- Productivity
  - Movement of Productivity to POW
  - No Measurement Systems for I.S. Productivity
  - Despite All the Application Development Tools, Backlog is Constant
  - Wrong Targets, Measurements

INPUT

NOTES:

SMKT-11

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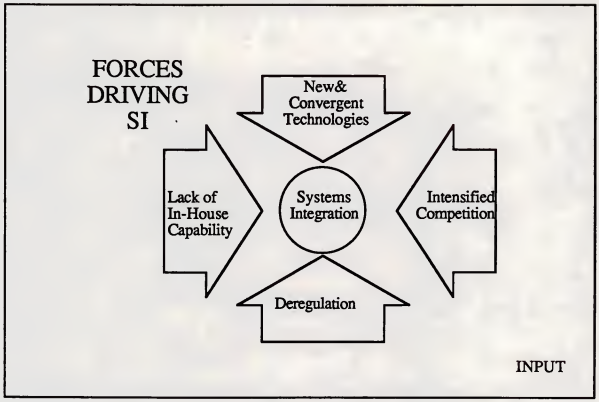

NOTES:

SMKT-24

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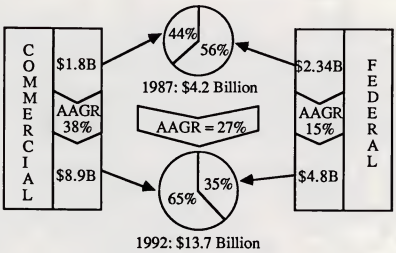
U.S. SYSTEMS INTEGRATION MARKETS



INPUT

NOTES:

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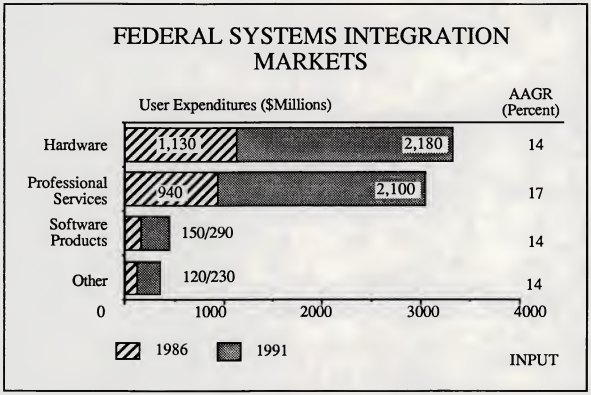

NOTES:

MPRE-135

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SYSTEMS INTEGRATION CHARACTERISTICS (CURRENT)

- End-to-End Solution Responsibility and Management
- Assumption of Risk
- Fixed Price, Fixed Schedule Commitment
- Innovative Information Systems Solution + +
- (Network)
- Technical/Application Competence

INPUT

NOTES:

SMKT-29

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SYSTEMS INTEGRATION CHARACTERISTICS (FUTURE)

- Leading Edge Process Knowledge/Innovation
- Network Integration
- International Scope
- Financing
- Performance Guarantees
- Industry Knowledge/Track Record

INPUT

NOTES:

MPRE-136

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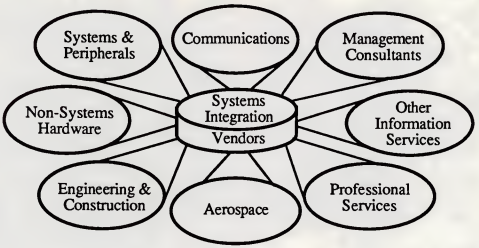
ALLIANCES AND COMPETITIVE OVERLAP



INPUT

NOTES:

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IMPACT OF INTEGRATION ON INFORMATION SERVICES

- Increasing Overlap of:
  - Products/Services
  - Competitors
  - Market Targets
- Opportunity to Broaden Company Mission, Redefine Role and Alliances

INPUT

NOTES:

MPRE-138

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IMPACT OF INTEGRATION ON BUSINESS PROCESSES

- Drives Restructuring of:
  - Organization
  - Job Content
  - Procedures
- Determines Competitive Advantage
- Requires Leveraging of Information Assets

INPUT

NOTES:

MPRE-151

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CSI VENDOR SELECTION CRITERIA

FACTOR	WEIGHT (Percent)
Technical Credibility of the Solution	40
Risk Avoidance	
- Experience/Capabilities	30
- Project Management Approach	10
Cost	20
Service Orientation	Not Scored

INPUT

NOTES:

MPRE-154

PRE-RFP WORK IS REQUIRED

- ☐ Get in Early on...
  - Consultant/Company Relationship Building
  - Understanding of Culture, Requirements
  - Pre-Qualification Demonstration

INPUT

NOTES:

MPRE-158A

PRE-RFP WORK IS REQUIRED (Cont.)

- ☐ Assess Project Carefully
  - Is It "Real"?
  - Can It Be Done?
  - Will It Be Worth the Investment?
  - Is This Our Kind of Business?

INPUT

NOTES:

MPRE-158B

CSI
IMPLEMENTATIONS
(Case Studies)

INPUT

NOTES:

MPRE-152

CASE STUDY #1:

STATE OF ALABAMA SUPERCOMPUTER NETWORK

Great Seal

INPUT

NOTES:

SMKT-37

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OBJECTIVE

Develop State-based Supercomputer Capability
for Academic/Industrial Research and State Backup.

INPUT

NOTES:

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PROJECT SCOPE

- Manage Entire Project/Consult on Physical Site
- Develop User Routine Library
- Provide User Training
- Install Supercomputer, Software Packages
- Interface to 9 Nodes
- Operate/Maintain All Sites
- Provide Marketing Support (Option)

INPUT

NOTES:

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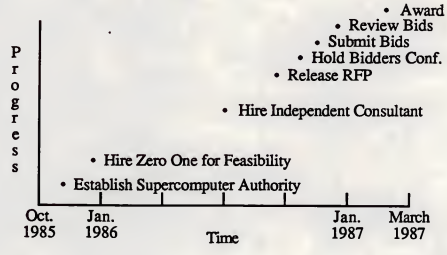
STEPS TO AWARD



INPUT

NOTES:

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BID REQUIREMENTS

- Fixed Price AND Cost Plus Fee
- Personnel Security Clearance
- Proposal Bond
- Performance Bond
- Financial Statements

INPUT

NOTES:

SMKT-41

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BIDDERS

- Boeing Computer Services (BCS)
- Electronic Data Services (EDS)
- Falcon Systems
- Grumman Data Services (GDS)
- International Business Machines (IBM)
- Zero One

INPUT

NOTES:

SMKT-42

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EVALUATION CRITERIA

- Cost
- Vendor Track Record
- Technical Soundness and Completeness
- Personnel Expertise
- Project Schedule Plan

INPUT

NOTES:

SMKT-43

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AWARD:

BCS

Boeing Computer Services Company

- Award for $38 Million
- One-Year Contract with Five One-Year Options

INPUT

NOTES:

SMKT-44

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WHY BCS WON

- Cost
- NSF Supercomputer Experience
- Bid Cray Supercomputer
- Processing Facilities Management Resources
- Supercomputer Software Library

INPUT

NOTES:

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CASE STUDY #2:

GPU
GENERAL PUBLIC UTILITIES

INPUT

NOTES:

MPRE-170

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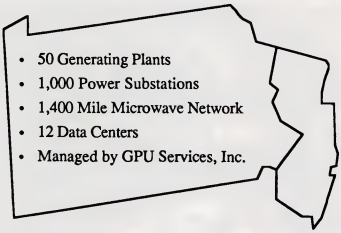
CURRENT ENERGY MANAGEMENT SYSTEM



- 50 Generating Plants
- 1,000 Power Substations
- 1,400 Mile Microwave Network
- 12 Data Centers
- Managed by GPU Services, Inc.

INPUT

NOTES:

MPRE-171

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PROBLEM

- Obsolete EMS
  - Vendor (Xerox) Out of Business
  - Time and Space Restrictions
  - Difficult to Maintain
- Heavily Patched General Purpose Applications

INPUT

NOTES:

MPRE-172

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SCOPE OF WORK

- Manage Entire Project
- Replace Current Hardware
- Consolidate to Four Sites
- Rewrite EMS
- Develop Portable Applications Software
- Increase Inter-Processor Communications
- Five-Year Maintenance

INPUT

NOTES:

MPRE-173

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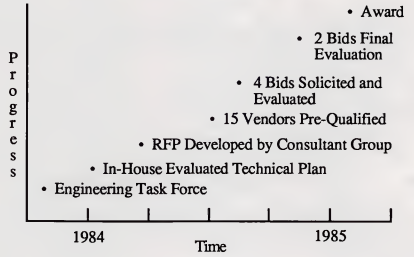
STEPS TO AWARD



INPUT

NOTES:

MPRE-174

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BIDDERS

- Control Data Corporation (CDC)
- Ferranti International
- SCI
- Stagg Systems

INPUT

NOTES:

MPRE-175

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EVALUATION CRITERIA

- Expertise in EMS
- Revenue Size in Proportion to Project Size
- General Processor Capabilities
- Ability to Develop Business Applications
- Size of Processor
- System Back-Up Plan

INPUT

NOTES:

MPRE-176

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AWARD

CONTROL DATA

Energy Management Systems Division

- $32 Million Over Five Years
- Five One-Year Maintenance Contracts

INPUT

NOTES:

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COMPETITIVE ANALYSIS

INPUT

NOTES:

SMKT-46

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"POWER PLAYERS"

- IBM
- Arthur Andersen
- EDS

INPUT

NOTES:

SMKT-47

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IBM IN SYSTEMS INTEGRATION

- First Commercial Systems Integration Contract in 1985.
- SI is distribution channel for IBM products.
- IBM products flow through regular IBM sales force.

INPUT

NOTES:

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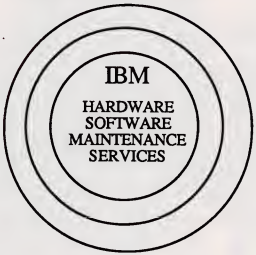
IBM VIEW OF SI



INPUT

NOTES:

SMKT-33

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IBM: THREE LEVELS OF PARTNERING OFFERED

- "Prime" (IBM Lead Vendor)
- "Secondary" (Another Vendor is Prime)
- "Commodity" (IBM Will Supply Hardware and Software Products)

INPUT

NOTES:

SMKT-34

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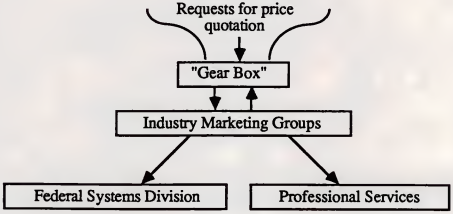
IBM'S SYSTEMS INTEGRATION STRUCTURE



INPUT

NOTES:

SMKT-35

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IBM IN SYSTEMS INTEGRATION
(continued)

- Partner Selection Criteria:
  - Application/Systems Expertise
  - Prior contract performance
  - Best competitive bid
  - End-user relationship
  - High IBM product/ service content
  - Motivation to work with IBM
  - Legal & practices
  - Other added value

INPUT

NOTES:

SMKT-36

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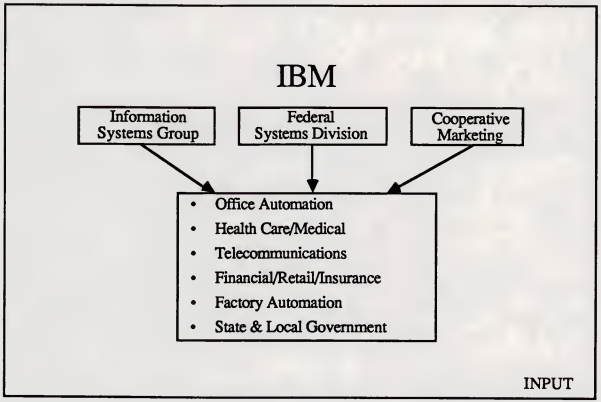

NOTES:

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ARTHUR ANDERSEN

- Management Information Consulting Group with 4,500 Dedicated Staff* Focused on Specific Industries; 1986: $400M Revenues
  - *Manufacturing (CIM) - State and Local Government
  - Insurance - *Networking - Utilities
  - Others (e.g., Airlines, Oil and Gas)

INPUT

NOTES:

SMKT-49

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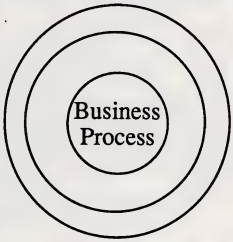
AA & CO. VIEW OF SI



INPUT

NOTES:

SMKT-50

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IMPACT '87

- 24,000 Square-Foot Mini-Factory
- State-of-the-Market Advanced Technologies
- Fully Integrated, On-Line Real Time Manufacturing Environment
- $18M of Hardware and Software

INPUT

NOTES:

SMKT-51

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IMPACT '87 (continued)

- Suppliers
  - Allen Bradley
  - Alliance Automation Systems
  - Cherry Electrical Products
  - Computer Methods Corp.
  - Denniston & Denniston
  - IBM
  - INTEL Corporation
  - Interactive Images
  - Intergraph Corp.
  - Pritsker & Associates
  - Rexnord Automation
  - Tandem Computers
  - Wes-Tech Automation Systems

INPUT

NOTES:

SMKT-52

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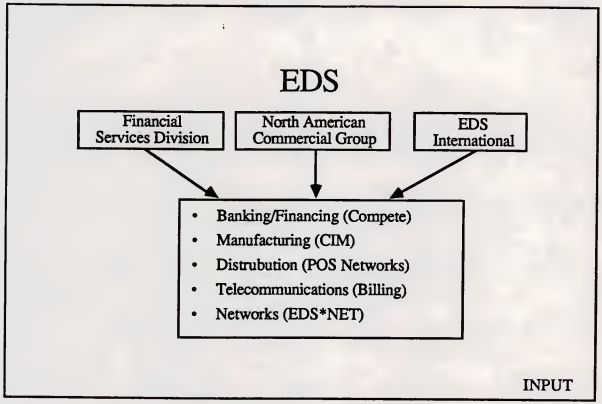

NOTES:

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HIGH POTENTIAL PLAYERS

- CSC
- AT&T
- Bechtel
- CDC
- Hughes
- TRW

INPUT

NOTES:

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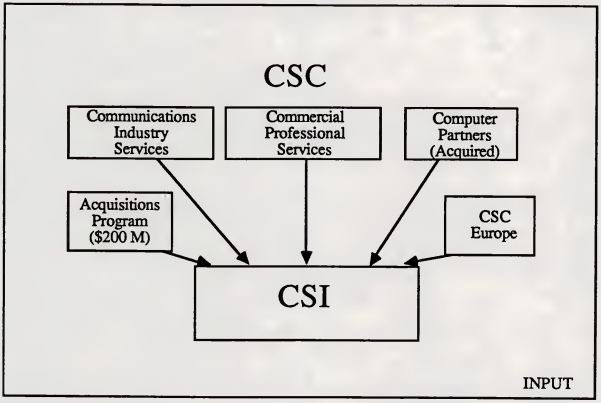

NOTES:

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AT & T

- Unique Opportunity to Become Prime Supplier to Network Integration to Corporate America
- No Focus on CSI
- Has Bid 17 Contracts in Partnership with EDS
- Should Forget Minicomputers and Concentrate on Network Integration

INPUT

NOTES:

SMKT-56

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BECHTEL

- Already Strongly Focused on:
  - Industrial Automation (Bechtel National)
  - Instrumentation/Process Control (Energy and Utilities)
  - Telecommunications Engineering (Optical Fiber, Microwave)

INPUT

NOTES:

SMKT-57

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PROFESSIONAL SERVICES
LARGEST VENDORS - 1986
(Continued)

	Revenue ($ Millions)
UNISYS	241
EDS	241
BBN	170
Logicon	170
TRW	165

INPUT

NOTES:

MPRE-179

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PROFESSIONAL SERVICES FAST-GROWING VENDORS - 1986

	Revenue ($ Millions)	85-86 Growth (Percent)
Perceptronics	24	111
Carnegie	9	79
Brandon Systems	19	77
Cornell Computer	33	55

INPUT

NOTES:

MPRE-180

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NETWORK
INTEGRATION

INPUT

NOTES:

MPRE-140

IMPACT OF INTEGRATION ON NETWORKS

- Increased Network I.Q.
- Improves Real Time Business Support
- Voice/Data/Text/Image Integration
- Software Driven Market Emphasis
- Technology Demand: ISDN, SS7, T-1, T-3

INPUT

NOTES:

MPRE-139

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NETWORK INTEGRATION

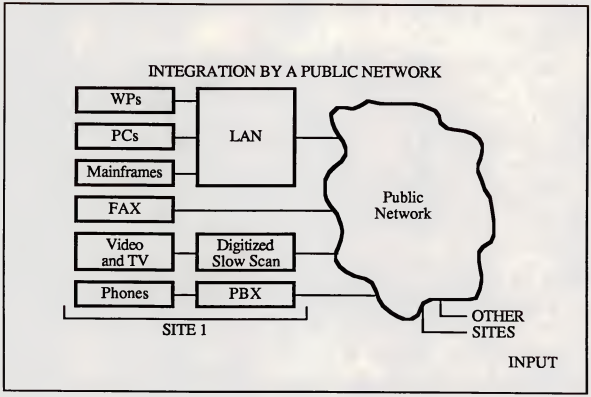
INFORMATION TYPES	INTEGRATION METHODS
☐ Voice ☐ Data - Numbers - Text ☐ Graphics - Fax ☐ Image - Video	☐ Special Equipment (e.g. Multiplexers and T1 Switches) ☐ PBX and Public/Private Networks ☐ Value Added Networks

☐ What to Integrate? ☐ How? ☐ By Who?

INPUT

NOTES:

MPRE-141



NOTES:

MPRE-144

USERS ARE ACTING NOW

- Knowledgeable
- Implementing Now
  - 25% of Fortune 100s
  - 10% of Fortune 500s

INPUT

NOTES:

MPRE-145A

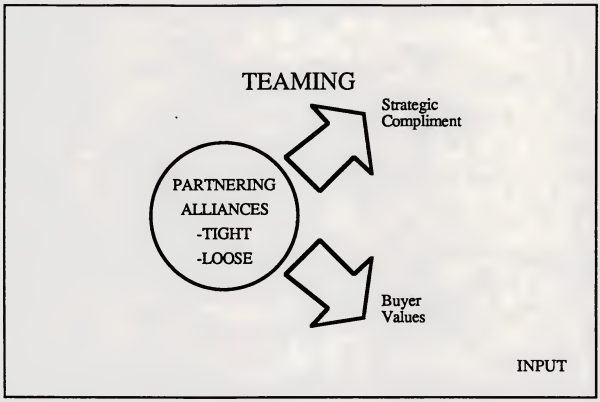
USERS ARE ACTING NOW (Cont.)

- Implementing by 1992
  - 90% of Fortune 100s
  - 50% of Fortune 500s
- 25% of a Company's Sites Will Be Integrated

INPUT

NOTES:

MPRE-145B



NOTES:

- Must match corporate SI strategy and values of the buyer set or target.
- Does buyer view solution independence as more important and a referenceable solution.

SMKT-63

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KEY ISSUES SYSTEMS INTEGRATION

- Account Control
- Sole-Source Supply of End-to-End Solutions
- Network Integration
- Multi-Vendor Environment
- Transfer of Responsibility
- Political Factors

INPUT

NOTES:

SMKT-64

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KEY ISSUES
FACILITIES MANAGEMENT

- Defense of Accounts
- Sophisticated Systems
- Lack of Skilled In-House Staff
- Low Margins, Long Term Contracts

INPUT

NOTES:

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CONCLUSIONS

INPUT

NOTES:

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CRITICAL SUCCESS FACTORS

- Business Solutions Versus Systems Solutions
- Selected Platforms
- Contract Services Becoming Commodity Market
- Strategic Focus
- Packaged Function Cores

INPUT

NOTES:

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IN-HOUSE GROUPS: STILL IN CHARGE

- STRENGTH:

  Knowledge of Historical, Political, and Operational Realities

- WEAKNESSES:

  Can't Rise Above Today's Problems to Visualize New Ways of Doing Things

INPUT

NOTES:

SMKT-71

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MANAGE RISK CONTAINMENT

- Size of Risk Varies with Project Size, Complexity
- All Levels of Company Need to be Sensitized to Risk Management
- Marketable

INPUT

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RECOMMENDATIONS

- Leverage Skills Inventory
- Track and Integrate Emerging Technology Early (CASE, Expert System Skills, Image Processing)
- Identify, Aquire Core Packaged Functions
- Emphasize Integration, Performance and Service

INPUT

NOTES:

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RECOMMENDED CHANGES OF EMPHASIS

1987 -1992

- Data Processing → Information Flow
- Information Quantity → Information Quality
- Automation of Process → Improvement of Process

INPUT

NOTES:

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RECOMMENDED CHANGES OF EMPHASIS (CONTINUED)

1992 - 1997

- Information Emphasis → Knowledge Emphasis
- Tool and Application Builders → D/I/K Architects
- Product Systems Vendors → Productivity Consultants

INPUT

NOTES:

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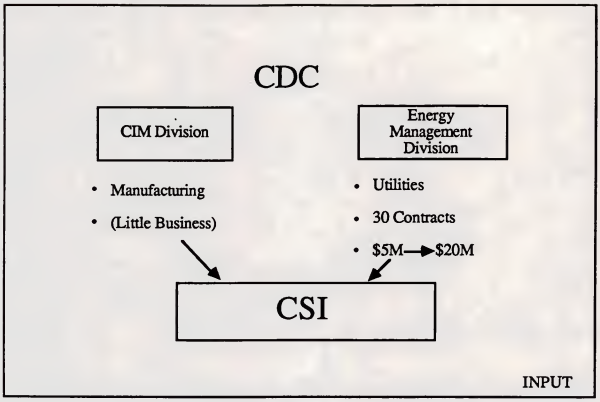

NOTES:

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1986 CSI MARKET SHARES

RANK	VENDOR	$MILLIONS	MARKET (PERCENT)
1	IBM	470	28
2	Arthur Andersen	220	13
3	EDS	120	7
4	AT & T	55	3
5	CDC	50	3

INPUT

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PROFESSIONAL SERVICES LARGEST VENDORS - 1986

	Revenue ($ Millions)
IBM	1,495
CSC	614
Arthur Andersen	400
BDM Intl	322
Planning Research	255

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